

PRELIMINARY DRAFT SUMMARY

NOTE: This is not a complete state summary, it is an early draft document, developed by EPA using only readily available information for the purpose of informing further EPA/state dialogue. It does not yet reflect EPA/state discussion to validate the content, address any information gaps and inconsistencies, or determine additional sources of information, etc.

Washington's Nutrient Profile

Washington's Department of Ecology (Ecology) works to protect and enhance the quantity and quality of the state's water resources. Ecology's Water Quality Program–Watershed Management Section oversees the state's nutrient strategy, utilizing a combination of regulatory tools, prevention programs, and funding mechanisms to control nutrient loads from both point and nonpoint sources. Washington's nutrient reduction efforts are primarily funded by state general funds and agency budgets, as well as CWA 319 funds.

To reduce the impact of nutrients, the state utilizes BMPs, NPDES and state permitting, TMDLs, regulatory requirements, nutrient management plans, water quality trading, interagency partnerships, voluntary programs, social media, and education. Washington has also developed a water quality trading framework, with a combination of various point and nonpoint sources eligible to participate. Ecology sees water quality trading as having the specific goal of helping point source dischargers meet permit limits through the purchase of pollution reduction credits from a source, often a nonpoint source, of the same pollutant that is able to reduce pollution at lower costs than the point source. Additionally, Ecology administers grant and loan programs to address nonpoint source pollution, including nutrient pollution.

1. Nutrient Strategy

- a. **Is the state developing or does it have an overarching nutrient strategy?** No. While there are numerous efforts underway to address nutrient problems in Washington, the state does not have an overarching statewide nutrient strategy. The state believes that providing clear standards, through approved suites of BMPs, and a regulatory certainty framework for nonpoint sources presents an important opportunity to take a more comprehensive approach to address nutrient pollution. Nonetheless, in key watersheds, there is an effort to monitor, assess, list as impaired and address nutrients through TMDLs and NPDES permits. Washington would like to discuss progress on nutrient strategies/controls in the multi-state meetings.
- b. **If yes, what is the timeframe for completion?**

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2. Element 1: Prioritization

- a. **What is the key approach for prioritizing nutrient reductions statewide?** Washington's statewide nutrient strategy uses stringent dissolved oxygen and pH criteria as indicators of potential nutrient problems for rivers and streams. The state's TMDL plans and STI projects are organized around indicators (DO and pH—usually as part of a multi-parameter TMDL or STI project) and watersheds.
 - i. **If a geographic or combination approach is being proposed, what criteria are used to select watersheds for implementation?** Ecology organizes targeted efforts, compliance response, and enforcement around both pollution sources and watersheds, while grant and loan programs can be organized around watersheds, indicators, and/or pollution sources. There appears to be a geographic focus to addressing nutrient reductions. Groundwater nitrates are the focus in the Yakima Valley, low DO is the focus in Puget Sound and stringent permits are in place to address phosphorus loading to the Spokane River.
 - ii. **If sector based, what sectors are covered?** Ecology's implementation plans' primary focus on pollutant sources. Washington's nutrient reduction program primarily targets wastewater treatment plants, septic systems, stormwater, farmland, animal feeding operations, and boats.
 - iii. **TMDLs? If so, how are they prioritized statewide?** The state has a process to schedule TMDLs based on priorities. Those priorities consider many factors not just nutrients. The state is also a big proponent of straight to implementation actions, foregoing TMDLs entirely.
 - iv. **Source water prioritization: How is source water protection addressed?** All public water systems are required to develop and implement a source water protection program as part of their water system planning.

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- 1. Is there an active nutrient source reduction effort underway in drainage areas for surface water drinking water intakes?** Limited Education/Outreach efforts have been initiated.
- 2. How are underground sources of drinking water addressed?** Washington recognizes sources of public drinking water systems (wellhead protection areas, i.e. groundwater or surface water watersheds) under the state's Critical Aquifer Recharge Area as part of the state's Growth Management Act or its watershed protection planning process. Additionally, there is a specific effort underway to address and remedy the nitrate groundwater contamination problem in the Yakima Valley, a rural, agricultural area with numerous dairies.
- 3. Are delineated source water protection areas and other source water data, e.g., nitrate MCL violations or water supplier data on elevated nitrate levels in source water, being used to identify priority sub-watersheds?** At the moment, Washington does not use source water protection location information, drinking water monitoring data, or source water protection plans to identify priority watersheds or guide watershed planning. There are some exceptions to this (Spokane comes to mind, because they have such a huge sole-source aquifer and are working jointly with Ecology and Idaho on protecting that resource), but for the most part, this is not happening consistently yet.
- 4. How will existing Source Water Protection Plans be included in watershed or sub-watershed planning and implementation of nutrient reduction actions?** The most recent priority sub-watershed identification was earlier this year when NRCS selected priority sub-watersheds for their funding programs. The sub-watersheds were all in SW Washington. Neither Ecology nor the Dept of Health was involved in the selection.

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b. Who are the stakeholder/partners/cooperator programs or entities engaged in prioritization (e.g., which State agencies/programs, interstate organizations Federal agencies, industry organizations, environmental organizations, NGOs)? To be addressed after dialogue with state.

i. What sorts of programs/initiatives/practices are leveraged in priority watershed(s)? To be addressed after dialogue with state.

ii. How are funding sources (including, e.g., CRP, CREP, EQIP, WRP, 319, CWSRF) targeted in support of this prioritization effort? To be addressed after dialogue with state.

3. Element 2: Load Reduction Targets

a. How does the state set load reduction targets? Through TMDLs only or other statewide targeting? TMDLs and other direct to implementation efforts.

b. Are the proposed nutrient reductions designed to achieve:

i. Protection of local water resources (including drinking water)? Variable—some end points are aquatic life protection (i.e., low dissolved oxygen in Lake Spokane). In the TMDL context the main surrogate for nutrients is low dissolved oxygen as an end point in surface waters, mainly lakes or reservoirs.

ii. Downstream goals (e.g., Chesapeake Bay, Great Lakes, Gulf of Mexico, other, etc.)? Some TMDLs, i.e., Spokane River TMDL, are written to protect downstream end points – i.e., a reservoir.

iii. Nutrient TMDLs? There some specific TMDLs that address nutrients.

# Nitrogen TMDLs	# Phosphorus TMDLs	# Other TMDLs
Ammonia: 5	P: 24	DO: 54
Ammonia Nitrogen: 45	TP: 9	BOD: 22
Inorganic nitrogen:		

Source: ATTAINS <http://www.epa.gov/waters/ir/>

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- c. **Are there (or will there be established) quantitative watershed nutrient reduction targets statewide (i.e., besides TMDLs)?** To be addressed after dialogue with state.
 - d. **What nutrient load reduction is needed?** To be addressed after dialogue with state. statewide; known in some specific watersheds.
 - e. **Do reduction targets amount to a substantial portion (e.g., 80%) of the statewide reductions needed?** To be addressed after dialogue with state.
 - f. **Is there a difference between what is needed and what is achievable?** To be addressed after dialogue with state.
4. **If TMDLs are the state's key means for nutrient prioritization and targeting (i.e., from questions 2a. and 3 a.):**
- a. **Does the state assess and list for N and P impairments?** No. Some watersheds (i.e., Spokane, Puget Sound) are assessed and through TMDLs and other means nutrient problems are addressed. Additionally, there has been a comprehensive assessment of whether the low dissolved oxygen levels in Puget Sound are caused by anthropogenic sources, including discharges of nitrogen. Recent results indicate that anthropogenic sources may not be a big factor in the DO depressions.

State Water Quality Assessment Results as Reflected in Most Recent Integrated or 305(b) Report

River Miles Assessed	% River Miles Assessed	River miles w/ nutrient-related impairment	% of Assessed rivers w/ nutrient related impairment	% nutrient impaired w/ TMDL or alternative restoration plan
1,997	3%	396	20%	0%
Lake/Reservoir Acres Assessed	% Lakes/Reservoirs Assessed	Acres w/ nutrient-related impairment	% of Assessed Lakes/Reservoirs w/ nutrient related impairment	% nutrient impaired w/ TMDL or alternative restoration plan
464,530	100%*	37,031	8%	0%

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Estuary/Bay Assessed (mi ²)	% Estuary/Bay Assessed	Bays/Estuaries mi ² w/nutrient-related impairment	% Assessed Bays/Estuaries w/nutrient-related impairment	% nutrient impaired bays/estuaries w/TMDL or alternative restoration plan
No data	No data	No data	No data	No data

Source:

http://water.epa.gov/scitech/swguidance/standards/criteria/nutrients/dataset_impaired.cfm

- b. If not, does the state currently assess and list for nutrient surrogates? Which ones (DO, pH, Chl-a, algal blooms, turbidity, etc.)? Generally, DO is the most sensitive nutrient surrogate that is assessed and then an evaluation is made as to whether phosphorus or nitrogen is driving the impairment.
- c. How does the state's nutrient approach address protection of healthy watersheds? To be addressed after dialogue with state..

5. Element 3: Point Source Effectiveness — (Note: data taken from table "Universe of Individual Permits with Nutrient Requirements"; see caveats and notes on full table).

Total # Individual Permits

Majors	Minors	Unknown	Total
74	403		477

- a. Is monitoring nitrogen and phosphorous required of majors? Minors? Stormwater Phase II or CAFO Permits?

Monitoring Only

# Majors	# Minors	# Total	% Majors	% Minors	%Total
9	34	43	12	8	9

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Washington requires nitrogen monitoring for majors and some minors when they discharge to marine waters and requires monitoring for both nitrogen and phosphorus for dischargers who discharge to fresh water.

b. Are there nutrient limits in all majors? Minors? Stormwater Phase II or CAFO Permits?

What are these limits based on?

Limits Only

# Majors	# Minors	# Total	% Majors	% Minors	%Total
3	4	7	4	1	1

Where there is a TMDL for nutrients (or a surrogate for nutrients—i.e., DO), stringent permit limits are required and put in place. For example, phosphorus limits to reduce the phosphorus loadings to the Spokane River). In the absence of an impairment list and development of a TMDL, monitoring is required in permits. The State does not routinely do reasonable potential analyses for nutrients when it develops permits for dischargers. State permits include the ability to order abatement of discharges.

c. If not, why not? Washington does not have numeric criteria for nutrients. Numeric targets are developed in the context of TMDLs. However, when there is no TMDL in place even if the waterbody is impaired for nutrients, the State does not set limits for nutrients.

d. What is the state's strategy for incorporating water quality based nutrient limits into permits? The State establishes nutrient targets in TMDLs and those targets are incorporated into NPDES permits, as appropriate.

6. Element 4: Agricultural Areas

a. How have or will the intended watersheds and practices, or practice systems be identified? To address nutrient pollution from nonpoint sources, use of Ecology-approved suites of BMPs (made up of foundational and supporting BMPs) can provide presumed compliance with the water quality standards and state water quality law. For example, to address nutrient pollution from livestock operations, the state recognizes three foundational

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BMPs: the Riparian Forest Buffer (NRCS 391), Fence (NRCS 382), and off-stream Watering Facility (NRCS 614). The Riparian Forest Buffer which has a thirty-five foot minimum width requirement is used as the primary means to reduce delivery of nutrients to waters of the state. The fence and off-stream Watering Facility are needed to support the permanent exclusion of animals from surface waters and the riparian buffer zone. Additional supporting practices, such as heavy use area protection and waste storage facility siting and design may be required based on site-specific factors. A similar set of foundational and supporting practices apply to manure application.

- i. **Who are the state's collaborators in prioritizing, setting targets and implementation planning for ag nutrient reduction?** To be addressed after dialogue with state.
- ii. **What role do USDA initiatives (MRBI, NWQI, etc.) play in the state's priority watersheds?** To be addressed after dialogue with state.
- iii. **Are there overlaps with any other federal program priority watershed areas?** To be addressed after dialogue with state.

7. Element 5: Storm water and septic

- a. **How will the state address any needed nutrient reductions from these sources?** For stormwater, BMP guidance is provided in stormwater manuals.

8. Element 6: Accountability and Verification Measures

Accountability in Washington's nutrient reduction efforts is ensured through a combination of regulatory tools, prevention programs, and mechanisms, each with accountability requirements built in. For example, the state makes use of TMDL programs and associated Detailed Implementation Plans to provide accountability for TMDLs. NPDES permits also have accountability built in to meeting the conditions of the permit.

- a. **Does the state make its nutrient framework/strategy/activities publicly available, e.g., online?** N/A

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b. How will BMP implementation be tracked and nutrient reduction/pollutant be measured/estimated? To be addressed after dialogue with state.

i. Are there established baselines of existing loads and existing BMP implementation? To be addressed after dialogue with state.

ii. Are nutrient reduction target milestones identified; short-term, long-term? To be addressed after dialogue with state.

c. How will information/data be managed and tracked to verify and report progress and support adaptive management? To be addressed after dialogue with state.

9. Element 7: Annual Public Reporting

a. What is the state's public process to share the annual status report and solicit feedback?
To be addressed after dialogue with state.

10. Element 8: Numeric Nutrient Criteria

- Lakes/reservoirs: Site-specific TP criteria
- Rivers/streams: Site-specific TP criteria